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Ira Cohen

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04/03/2009

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

BARQADLE, YASIN M

ART UNIT

PAPER NUMBER

2456

NOTIFICATION DATE

DELIVERY MODE

04/03/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM

ipa.mail@hp.com

jessica.l.fusek@hp.com

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/026,061 | Applicant(s) COHEN ET AL. | |
| | Examiner YASIN M. BARQADLE | Art Unit 2456 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11,12,15-23 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-12,15-23 and 26-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

In view of the appeal brief filed on 12/17/2008, PROSECUTION IS HEREBY REOPENED. A new ground of rejection set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31. A new notice of appeal fee and appeal brief fee will not be required for applicant to appeal from the new Office action. Any appeal brief filed on or after September 13, 2004 must comply with 37 CFR 41.37.

- Claims 11-12, 15-23, 26-29 are pending.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 21-29 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention.

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Claims 21-29 calls for "a hardware system", While the claims recite "a hardware system", in the preamble, it does not show a physical hardware/structure in the claimed limitations. Thus the claims do not qualify as one of the four statutory categories of invention.

At best the elements comprising of the hardware system reasonably indicate to be software. Therefore, claims 21-29 are rejected as been directed to a non-statutory subject matter (i.e., software per se).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-15 and 20-26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Each of claims 11-15 and 20-26 appears to be an abstract idea rather than a practical application of the idea. Each of claims 11-15 and 20-26 does not result in a physical transformation nor does it appear to provide a useful, concrete and tangible result. Therefore, claims 11-15 and 20-26 are rejected as being directed to a non-statutory subject matter (i.e., abstract idea).

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Claims 11-20 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 21-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. " A hardware comprising: generating a set of parameters of the Bayesian network in response to a set of past observation data such that the Bayesian network models an

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environment; obtaining a set of present observation data from the environment; determining an estimate of the parameters in response to the present observation data; adapting a learning rate for the parameter such that the learning rate responds to changes in the environment indicated in the present observation data, by increasing the learning rate when an error between the estimate and a mean value of the parameters is relatively large and decreasing the learning rate when convergences is reached between the estimate and the mean value of the parameters....”

The specification does not clearly show how the hardware system or what hardware system performs the elements listed in the claims.

Claims 21-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. " A hardware comprising: generating a set of parameters of the Bayesian network in response to a set of past observation data such that the Bayesian network models an environment; obtaining a set of present observation data from the environment; determining an estimate of the parameters in response to the present observation data; adapting a learning rate for the parameter such that the learning rate responds to

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changes in the environment indicated in the present observation data, by increasing the learning rate when an error between the estimate and a mean value of the parameters is relatively large and decreasing the learning rate when convergences is reached between the estimate and the mean value of the parameters....". The specification does not clearly show how the hardware system or what hardware system performs the elements listed in the claims.

Claim Rejections - 35 USC §§ 102-103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. §§ 102-103 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-12,15-16 and 20-23 and 26 are rejected under 35

U.S.C. 102(b) as being anticipated

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or, in the alternative, under 35 U.S.C. 103(a) as obvious over by “In Proceedings of the Thirteen Annual Conference on Uncertainty in Artificial Intelligence (UAI-97), pages 3-13, Providence, Rhode Island, august 1-3, 1997, Eric et al.

As per claims 11 and 21, Eric et al teach a method and system for adapting a Bayesian network (abstract), comprising the steps of:

generating a set of parameters of the Bayesian network in response to a set of past observation data such that the Bayesian network models an environment (page 1, ¶ 7 and page 2, sec. 2.1 ¶ 16);

obtaining a set of present observation data from the environment (page 7, ¶ 51-52 and page 9, ¶ 59);

determining an estimate of the parameters in response to the present observation data;

adapting a learning rate for the parameter such that the learning rate responds to changes in the environment indicated in the present observation data (page 2, ¶ 10-13; page 4, ¶ 29-30 and page 10 ¶ 64), by increasing the learning rate when an error between the estimate and a mean value of the parameters is relatively large and decreasing the learning rate when convergences is reached between the estimate and the mean value of the parameters (pages 2, sec 2.1 ¶ 16-21 and pages 6,

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¶ 41-46. See convergence property section on page 5 and page 10 paragraphs 1-4. See also err graphs in fig. 3 top of page 9);

updating the parameters in response the present observation data using the learning rate (page 2, ¶ 10-11 and page 4, ¶ 29-30); and

using the Bayesian network to model the environment and diagnose problems or predict events in the environment (abstract)

As per claims 12 and 22, Eric et al teach the method and the system of claims 11 and 21, wherein adapting comprises adapting a different learning rate for each parameter of the Bayesian network (page 2, ¶ 10-12; page 4, ¶ 29-30 and page 7, ¶ 50-52).

Even if Eric et al is not seen as teaching increasing the learning rate when an error between the estimate and a mean value of the parameters is relatively large and decreasing the learning rate when convergences is reached between the estimate and the mean value of the parameters, this feature would clearly have been obvious to one of ordinary skill in the art at the time of the invention. It would have been obvious to increasing the learning rate when an error between the estimate and a mean value of the parameters is relatively large and decreasing the learning rate when convergences is reached between the estimate and the mean value of the parameters in order to enable Eric et al's system to dynamically adapt new learning rate and adjust it accordingly.

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As per claims 15 and 26, Eric et al teaches the method and the system of claims 11 and 21, wherein a subset of values in the present observation data is unavailable when updating (pages 2, ¶ 16-22 and pages 6, ¶ 59-60).

As per claim 16, Eric et al teaches the method of claim 11, wherein the environment is an online environment (pages 6, ¶ 59-60).

As per claims 20 and 23, Eric et al teaches the method and the system of claims 11 and 21, wherein updating comprises determining an initial set of the parameters and then updating the parameters in response to the present observation data using the learning rate (page 2, ¶ 10-11 and page 4, ¶ 29-30).

Claims 17-19 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eric et al (UAI-97 publication) in view of Bronstein U.S. Publication No. (20030018494).

As per claim 17, 18 and 27-28 Eric et al teach the invention as discussed above. However, Eric et al do not explicitly teach wherein the online environment is an email system or e-commerce system.

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Bronstein whose invention is about assessing health of a subsystem or service within a networked system using probabilistic reasoning network such as Bayesian network (abstract and ¶ 0063 and 0068), discloses assessing the health of a network services including an e-mail service and an e-commerce service (¶ 0030-0031). Giving the teaching of Bronstein, a person of ordinary skill in the art at the time of the invention would have readily recognized the advantage of modifying Eric by employing the probabilistic reasoning network of Bronstein so as to provide an overall health assessment of network elements such as email and ecommerce system using a very general modular architecture (see FIG. 3). "This reduces the customization effort. This in turn minimizes the engineering cost of providing health assessment for software, hardware, or services." (¶0012 and ¶0035-0036).

As per claims 19 and 29, Bronstein teaches the invention, wherein the online environment is a database system (¶ 0036; ¶0049-0051).

Claims 11-16,18-26 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiesson et al US. Patent Number (6807537) in view of Black U.S. Patent Number (6269351).

As per claims 11 and 21, Thiesson et al teach a method and hardware system for adapting a Bayesian network (abstract), comprising the steps

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of:

generating a set of parameters of the Bayesian network in response to a set of past observation data such that the Bayesian network models an environment (The MBN generator 502 of the exemplary embodiment contains a scoring mechanism 602 and a network adjuster 606. The scoring mechanism 602 receives the expert knowledge 506, the empirical data 504, the test network 608 and a list of nodes 610 as input. After receiving this information, the scoring mechanism 608 generates a score 604 that ranks the nodes of test network 608 as indicated by the list of nodes 610 for goodness ... After iterating many times between the scoring mechanism 602 and the network adjuster 606, the network adjuster eventually generates an improved MBN 508 (hereinafter referred to as a Bayesian network).” col. 21, lines 27-65 and col. 22, lines 56 to col. 23, line 30);

obtaining a set of present observation data from the environment “The network adjuster 606 receives as input the score 604 and the initial network and generates a new test network 608 in response thereto, which is then passed back to the scoring mechanism 602 with a list of nodes 610 which need to be rescored.” col. 21, lines 27-65 and col. 22, lines 56 col. 29, lines 36-55);

updating the parameters in response to the present observation data (the Bayesian network is scored for how well all decision graphs

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reflect the data, and the Bayesian network is then updated to improve its score col. 29, lines 36-55 and col. 32, lines 43-67. see fig. 26A and col. 21, lines 27-65).

Although Thiesson shows substantial features of the claimed invention, he does not explicitly show adapting a learning rate for the parameter such that the learning rate responds to changes in the environment indicated by present observation data.

Nonetheless, this feature is well known in the art and would have been an obvious modification of the system disclosed by Thiesson, as evidenced by Black USPN. (6269351).

In analogous art, Black whose invention is about “an improved neural network training method and system having the ability to change its learning rate in response to training performance, to automatically select a representative training dataset, to reinitialize the neural network to achieve a preset error goal, and to automatically optimize the neural network size for a given training dataset” (col. 1, lines 6-14), discloses adapting a learning rate for the parameter such that the learning rate responds to changes in the environment indicated by present observation data (col. 11, lines 6-25 and col. 18, lines 2-26; See abstract and col. 5, lines 2-25). Giving the teaching of Black, a person of ordinary skill in the art would have readily recognized the desirability and the advantage of modifying Thiesson by employing the adaptive learning rate system of

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Black so as to provide an adaptive learning rate method with the capability to take progressively larger or smaller training steps in real-time. In this way a real-time updating is provided with the capability to deploy and update a modeling system with a large number of variables that is robust (col. 14, 60-65 and col. 18, lines 18-26).

Thiesson further teaches a system of obtaining observation data from on-line environment (refer to Fig. 28, col. 21, lines 27-65 and col. 29, line 36 – col. 30, line 29).

As per claims 12 and 22, Black as combined with Thiesson teaches the method and the system of claims 11 and 21, wherein adapting comprises adapting a different learning rate for each parameter of the Bayesian network (col. 11, lines 6-25 and col. 18, lines 27-49).

As per claims 13 and 24, Black as combined with Thiesson teaches the method and the system of claims 11 and 21, wherein adapting comprise determining an initial value for the learning rate and determining an estimate of the parameters in response to the present observation data and increasing the learning rate if an error between the estimate and a mean value of the parameters is relatively large (col. 5, lines 2-25 and col. 11, line 60 – col. 12, line 39).

As per claims 14 and 25, Black as combined with Thiesson teaches the method and the system of claims 11 and 21, wherein adapting comprise

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determining an initial value for the learning rate and determining an estimate of the parameters in response to the present observation data and decreasing the learning rate when convergence is reached between the estimate and a mean value of the parameters (col. 5, lines 2-25 and col. 11, line 60 to col. 12, line 39).

As per claims 15 and 23, Thiesson et al teach the method and the system of claims 11 and 21, wherein a subset of values in the present observation data is unavailable when updating (col. 9, lines 8-45 and col. 22, lines 16-42).

As per claim 16, Thiesson et al teach the method of claim 11, wherein the environment is an online environment (refer to Fig. 28, col. 21, lines 27-65 and col. 29, line 36 – col. 30, line 29).

As per claim 18 and 28, Thiesson et al teach the method and the system of claims 16 and 21, wherein the online environment is an e-commerce System (col. 31, lines 7-47).

As per claim 19 and 29, Thiesson et al teach the method and the system of claims 16 and 21, wherein the online environment is a database system (col. 4, lines 8-23).

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As per claim 20 and 23, Thiesson et al teach the method and the system of claims 11 and 21, wherein updating comprises determining an initial set of the parameters and then updating the parameters in response to the present observation data using the learning rate (col. 12, lines 14-61 and col. 24, lines 36-67).

1. Claim 17 and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiesson et al US. Patent No. (6807537) in view of Baker and further in view of Bronstein U.S. Publication No. (20030018494).

As per claims 17 and 27, Thiesson et al and Black teach the invention as discussed above. However, Thiesson and Black do not explicitly teach wherein the online environment is an email system.

Bronstein whose invention is about assessing health of a subsystem or service within a networked system using probabilistic reasoning network such as Bayesian network (abstract and ¶ 0063 and 0068), discloses assessing the health of a network services including an e-mail service (¶ 0030-0031).

Giving the teaching of Bronstein, a person of ordinary skill in the art at the time of the invention would have readily recognized the advantage of modifying Thiesson et al and Black by employing the probabilistic reasoning network of Bronstein so as to provide an overall health assessment of network elements such as email system using a very

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general modular architecture (see FIG. 3). “This reduces the customization effort. This in turn minimizes the engineering cost of providing health assessment for software, hardware, or services.” (¶ 0012 and ¶ 0035-0036).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yasin Barqadle whose telephone number is 571-272-3947. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yasin M Barqadle/

Primary Examiner, Art Unit 2456

/Bunjob Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2456